adhesively bonding a clamping mechanism to the scintillator array to form a scintillator/clamping mechanism assembly, wherein said step of placing the scintillator array on top of the preformed film comprises the step of adhesively bonding the clamping mechanism of the scintillator/clamping mechanism assembly to the substrate, wherein the clamping mechanism has a thermal coefficient of expansion less than the substrate.

REMARKS

Claims 4-8, 11-16, 18, 19, 22, and 24-25 are pending in this application. Claims 4-8, 11-16, 18, 19, 22, 24-26 and 28-30 stand rejected. Claims 1-3, 9-10, 17, 20-21, 23, and 26-30 have been cancelled. Submitted herewith is a Submission of Marked Up Claims.

The rejection of Claims 4, 6, 15, 16, 18, 19, 22, 24, 26 under 35 U.S.C. § 103(a) as being unpatentable over Hoffman et al. (U.S. Patent 6,144,718) in view of Schafer et al. (U.S. Patent 6,091,795) is respectfully traversed.

Hoffman et al. describe a flexible cable wherein wires from the flexible cable are wire bonded to photodiode output signals. Abstract. Notably, Hoffman et al. are silent with respect to thermal coefficients of expansion.

Schafer et al. describe "In a preferred embodiment, at least one three-dimensional grid and at least one planar grid are employed in the assembly. The three-dimensional alignment grid 28 is preferably made of an optically opaque material which has a relatively low coefficient of thermal expansion, so as to lend structural support and stability to the detector array during operation of the scanner. Suitable materials for the three-dimensional alignment grid include, for example, glass, fiberglass, plastic and opaque ceramic." Col. 6, line 61 to col. 7, line 2. Schafer et al. further describe that "The substrate 12 can be made of any structural material which is suitable for supporting the photodiode and scintillator crystal array, as well as the electrical interconnect layer and signal transmission means. Suitable materials for the substrate include, for example, plastic, glass, fiberglass and ceramics." Col. 7, lines 52-57. Accordingly, Applicant respectfully traverses the assertion in the Office Action that 'relatively' in the comparison made

by Schafer et al. is with respect to the substrate 12." Rather, Applicant submits that because Schafer et al. describe that the same materials (glass, fiberglass, plastic, and ceramic) are suitable for both the three-dimensional alignment grid and the substrate, Schafer et al. are not making a comparison between the thermal coefficients of expansion of the three-dimensional alignment grid and the substrate. In response to the assertion in the Office Action dated February 27, 2003 that "the effect of the argument made by Applicant's representative is that 'relatively' in the quoted disclosure has no meaning," it is respectfully submitted that Applicant's position is not that "relatively" has no meaning. Rather, it is submitted that "relatively" is used generally and that there is no support in Shafer et al. for the assertion that Schafer et al. are making a comparison between the thermal coefficients of expansion of the three-dimensional alignment grid and the substrate. Schafer et al. further describe that a plurality of "scintillator crystals 22 are surrounded on up to all sides, other than the side closest to a corresponding photodiode 14, by an optically reflective material 30, such as, for example, an epoxy filled with titanium dioxide" (col. 7, lines 32-37) and that "the region between a scintillator crystal and a corresponding photodiode is preferably filled with an optically transmissive medium, such as air, silicone, transparent polymers, or glass. The regions between and above adjacent scintillator crystals are filled with an optically reflective medium, such as titanium-containing epoxy or a reflective paint or foil". Col. 8, lines 28-35. Notably, Schafer et al. are silent with respect to titanium oxide and a clamping mechanism including a silica glass containing titanium oxide.

Applicant respectfully submits that the Section 103 rejection of the presently pending claims is not a proper rejection. Obviousness cannot be established by merely suggesting that it would have been obvious to one of ordinary skill in the art to modify Hoffman et al. according to the teachings of Schafer et al. More specifically, as is well established, obviousness cannot be established by combining the teachings of the cited art to produce the claimed invention, absent some teaching, suggestion, or incentive supporting the combination. Neither Hoffman et al. nor Schafer et al., alone or in combination, describe or suggest the claimed combination. Rather, the present Section 103 rejection appears to be based on a combination of teachings selected from multiple patents in an attempt to arrive at the claimed invention. Specifically Hoffman et al. is

cited for its teaching of a flexible cable wherein wires from the flexible cable are wire bonded to photodiode output signals, and Schafer et al. is cited for its teaching that the same materials are suitable for both a three-dimensional alignment grid and a substrate. Since there is no teaching nor suggestion in the cited art for the claimed combination, the Section 103 rejection appears to be based on a hindsight reconstruction in which isolated disclosures have been picked and chosen in an attempt to deprecate the present invention. Of course, such a combination is impermissible, and for this reason alone, Applicant respectfully requests that the Section 103 rejection of Claims be withdrawn.

Further, and to the extent understood, neither Hoffman et al. nor Schafer et al., alone or in combination, describe or suggest the claimed combination, and as such, the presently pending claims are patentably distinguishable from the cited combination.

Claim 4 recites a finished detector module assembly suitable for use in a computed tomography (CT) imaging system, wherein the detector module includes "a substrate; a photosensor array mounted on the substrate; an array of scintillators optically coupled to said photosensor array and separated therefrom by a gap, said gap filled with a compliant clear film positioned distanced from at least one of said array of scintillators and said photosensor array less than one-half of a wavelength of light emitted by said scintillators; a clamping mechanism clamping said array of scintillators in place above and aligned with said photosensor array, wherein said clamping mechanism has a thermal coefficient of expansion less than that of said substrate; and a flexible electrical cable electrically coupled to the photosensor array".

Neither Hoffman et al. nor Schafer et al., alone or in combination, describe or suggest a finished detector module assembly including a substrate, a photosensor array mounted on the substrate, an array of scintillators optically coupled to the photosensor array and separated therefrom by a gap, the gap filled with a compliant clear film positioned distanced from at least one of the array of scintillators and the photosensor array less than one-half of a wavelength of light emitted by the scintillators, a clamping mechanism clamping the array of scintillators in

place above and aligned with the photosensor array, wherein the clamping mechanism has a thermal coefficient of expansion less than that of the substrate, and a flexible electrical cable electrically coupled to the photosensor array. Moreover, neither Hoffman et al. nor Schafer et al., alone or in combination, describe or suggest a finished detector module assembly wherein an array of scintillators is optically coupled to the photosensor array and separated therefrom by a gap, wherein the gap is filled with a compliant clear film positioned distanced from at least one of the array of scintillators and the photosensor array less than one-half of a wavelength of light emitted by the scintillators. Rather, Hoffman et al. are silent regarding a compliant clear film positioned distanced from at least one of the array of scintillators and the photosensor array less than one-half of a wavelength of light emitted by the scintillators, and Schafer et al. describe that the thermal expansion of an alignment grid is relatively low and suitable materials for the grid include glass, fiberglass, plastic, and ceramic, which are the same suitable materials for the substrate of Schafer et al. For at least the reasons above, Claim 4 is submitted to be patentable over Hoffman et al. in view of Schafer et al.

Claims 6, 15, 16, 18, and 19 depend, directly or indirectly, from independent Claim 4. When the recitations of Claims 6, 15, 16, 18, and 19 are considered in combination with the recitations of Claim 4, Applicant submits that dependent Claims 6, 15, 16, 18, and 19 likewise are patentable over Hoffman et al. in view of Schafer et al.

Claim 24 recites a method for making a finished detector module suitable for use in computed tomography (CT) imaging systems, the finished detector module including a photosensor array optically coupled to an array of scintillators, wherein the method includes "adhesively bonding a photosensor array to a substrate; electrically bonding a flexible cable to the photosensor array; preforming a compliant, clear film into a size and shape configured for placement between and optical coupling of the photosensor array to an array of scintillators; placing the preformed film on top of the photosensor array; placing a scintillator array on top of the preformed film, the scintillator and the preformed film separated by a gap less than one-half of a wavelength of light emitted by said scintillators; adhesively bonding a clamping mechanism

to the scintillator array to form a scintillator/clamping mechanism assembly, wherein said step of placing the scintillator array on top of the preformed film comprises the step of adhesively bonding the clamping mechanism of the scintillator/clamping mechanism assembly to the substrate, wherein the clamping mechanism has a thermal coefficient of expansion less than the substrate".

Neither Hoffman et al. nor Schafer et al., alone or in combination, describe or suggest a method for making a finished detector module suitable for use in computed tomography (CT) imaging systems, the finished detector module including a photosensor array optically coupled to an array of scintillators, wherein the method includes adhesively bonding a photosensor array to a substrate, electrically bonding a flexible cable to the photosensor array, preforming a compliant, clear film into a size and shape configured for placement between and optical coupling of the photosensor array to an array of scintillators, placing the preformed film on top of the photosensor array, placing a scintillator array on top of the preformed film the scintillator and the preformed film separated by a gap less than one-half of a wavelength of light emitted by the scintillators, adhesively bonding a clamping mechanism to the scintillator array to form a scintillator/clamping mechanism assembly, wherein the step of placing the scintillator array on top of the preformed film includes adhesively bonding the clamping mechanism of the scintillator/clamping mechanism assembly to the substrate, wherein the clamping mechanism has a thermal coefficient of expansion less than the substrate. Moreover, neither Hoffman et al. nor Schafer et al., alone or in combination, describe or suggest a method including placing a scintillator array on top of the preformed film the scintillator and the preformed film separated by a gap less than one-half of a wavelength of light emitted by the scintillators. Rather, Hoffman et al. are silent regarding placing a scintillator array on top of the preformed film the scintillator and the preformed film separated by a gap less than one-half of a wavelength of light emitted by the scintillators, and Schafer et al. describe that the thermal expansion of an alignment grid is relatively low and suitable materials for the grid include glass, fiberglass, plastic, and ceramic, which are the same suitable materials for the substrate of Schafer et al. For at least the reasons above, Claim 24 is submitted to be patentable over Hoffman et al. in view of Schafer et al.

Claim 22 depends directly from independent Claim 24. When the recitations of Claim 22 is considered in combination with the recitations of Claim 24, Applicant submits that dependent Claim 22 is likewise are patentable over Hoffman et al. in view of Schafer et al. Claim 26 has been canceled.

For the reasons set forth above, Applicant respectfully requests that the Section 103 rejection of Claims 4, 6, 15, 16, 18, 19, 22, 24, 26 be withdrawn.

The rejection of Claims 5, 25, and 28 under 35 U.S.C. § 103(a) as being unpatentable over Hoffman et al. and Schafer et al. in view of Wieczorek et al. (U.S. Patent 6,252,927) is respectfully traversed.

Hoffman et al. and Schafer et al. are described above. Wieczorek et al. describe a scintillator layer including yttrium gadolinium oxide (YGO).

Applicant respectfully submits that the Section 103 rejection of the presently pending claim is not a proper rejection. Obviousness cannot be established by merely suggesting that it would have been obvious to one of ordinary skill in the art to modify Hoffman et al. according to the teachings of Schafer et al. and Wieczorek et al. More specifically, as is well established, obviousness cannot be established by combining the teachings of the cited art to produce the claimed invention, absent some teaching, suggestion, or incentive supporting the combination. None of Hoffman et al., Schafer et al., and Wieczorek et al., alone or in combination, describe or suggest the claimed combination. Rather, the present Section 103 rejection appears to be based on a combination of teachings selected from multiple patents in an attempt to arrive at the claimed invention. Specifically Hoffman et al. is cited for its teaching of a flexible cable wherein wires from the flexible cable are wire bonded to photodiode output signals, Schafer et al. is cited for its teaching that the same materials are suitable for both a three-dimensional alignment grid and a substrate, and Wieczorek et al. is cited for its teaching of a scintillator layer including YGO. Since there is no teaching nor suggestion in the cited art for the claimed combination, the Section 103 rejection appears to be based on a hindsight reconstruction in

which isolated disclosures have been picked and chosen in an attempt to deprecate the present invention. Of course, such a combination is impermissible, and for this reason alone, Applicant respectfully requests that the Section 103 rejection of Claims 5, 25, and 28 be withdrawn.

Further, and to the extent understood, none of Hoffman et al., Schafer et al., and Wieczorek et al., alone or in combination, describe or suggest the claimed combination, and as such, the presently pending claims are patentably distinguishable from the cited combination.

Claim 5 recites a finished detector module assembly suitable for use in a computed tomography (CT) imaging system, wherein the detector module includes "a substrate; a photosensor array mounted on the substrate; an array of scintillators optically coupled to said photosensor array and separated therefrom by a gap, said gap filled with a compliant clear film positioned distanced from at least one of said array of scintillators and said photosensor array less than one-half of a wavelength of light emitted by said scintillators; a clamping mechanism clamping said array of scintillators in place above and aligned with said photosensor array, wherein said clamping mechanism comprises a silica glass containing titanium oxide, said array of scintillators comprises yttrium gadolinium oxide and an epoxy reflector material, and said substrate comprises a ceramic; and a flexible electrical cable electrically coupled to the photosensor array".

None of Hoffman et al., Schafer et al., and Wieczorek et al., alone or in combination, describe or suggest a finished detector module assembly including a substrate, a photosensor array mounted on the substrate, an array of scintillators optically coupled to the photosensor array and separated therefrom by a gap, the gap filled with a compliant clear film positioned distanced from at least one of the array of scintillators and the photosensor array less than one-half of a wavelength of light emitted by the scintillators, a clamping mechanism clamping the array of scintillators in place above and aligned with the photosensor array, wherein the clamping mechanism comprises a silica glass containing titanium oxide, the array of scintillators comprises yttrium gadolinium oxide and an epoxy reflector material, and the substrate comprises

a ceramic, and a flexible electrical cable electrically coupled to the photosensor array. Moreover, none of Hoffman et al., Schafer et al., and Wieczorek et al., alone or in combination, describe or suggest a finished detector module assembly wherein an array of scintillators is optically coupled to the photosensor array and separated therefrom by a gap, the gap filled with a compliant clear film positioned distanced from at least one of the array of scintillators and the photosensor array less than one-half of a wavelength of light emitted by the scintillators. Rather, Hoffman et al. are silent regarding a compliant clear film positioned distanced from at least one of the array of scintillators and the photosensor array less than one-half of a wavelength of light emitted by the scintillators, Schafer et al. describe an epoxy filled with titanium dioxide, and Wieczorek et al. describe a scintillator layer including YGO. For at least the reasons above, Claim 5 is submitted to be patentable over Hoffman et al. in view of Schafer et al. and further in view of Wieczorek et al.

Claim 25 depends from Claim 24 which recites a method for making a finished detector module suitable for use in computed tomography (CT) imaging systems, the finished detector module including a photosensor array optically coupled to an array of scintillators, wherein the method includes "adhesively bonding a photosensor array to a substrate; electrically bonding a flexible cable to the photosensor array; preforming a compliant, clear film into a size and shape configured for placement between and optical coupling of the photosensor array to an array of scintillators; placing the preformed film on top of the photosensor array; placing a scintillator array on top of the preformed film, the scintillator and the preformed film separated by a gap less than one-half of a wavelength of light emitted by the scintillators; adhesively bonding a clamping mechanism to the scintillator array to form a scintillator/clamping mechanism assembly, wherein said step of placing the scintillator array on top of the preformed film comprises the step of adhesively bonding the clamping mechanism of the scintillator/clamping mechanism assembly to the substrate, wherein the clamping mechanism has a thermal coefficient of expansion less than the substrate."

None of Hoffman et al., Schafer et al., and Wieczorek et al., alone or in combination, describe or suggest a method for making a finished detector module suitable for use in computed tomography (CT) imaging systems, the finished detector module including a photosensor array optically coupled to an array of scintillators, wherein the method includes adhesively bonding a photosensor array to a substrate, electrically bonding a flexible cable to the photosensor array, preforming a compliant, clear film into a size and shape configured for placement between and optical coupling of the photosensor array to an array of scintillators, placing the preformed film on top of the photosensor array, placing a scintillator array on top of the preformed film, the scintillator and the preformed film separated by a gap less than one-half of a wavelength of light emitted by the scintillators, adhesively bonding a clamping mechanism to the scintillator array to form a scintillator/clamping mechanism assembly, wherein the step of placing the scintillator array on top of the preformed film includes adhesively bonding the clamping mechanism of the scintillator/clamping mechanism assembly to the substrate, wherein the clamping mechanism has a thermal coefficient of expansion less than the substrate. Moreover, none of Hoffman et al., Schafer et al., and Wieczorek et al., alone or in combination, describe or suggest a method including placing a scintillator array on top of the preformed film, the scintillator and the preformed film separated by a gap less than one-half of a wavelength of light emitted by the scintillators. Rather, Hoffman et al., Schafer et al., and Wieczorek et al. are silent regarding the scintillator and the preformed film separated by a gap less than one-half of a wavelength of light emitted by the scintillators. For at least the reasons above, Claim 24 is submitted to be patentable over Hoffman et al. in view of Schafer et al. and further in view of Wieczorek et al.

Claim 25 depends directly from independent Claim 24. When the recitations of Claim 25 are considered in combination with the recitations of Claim 24, Applicant submits that dependent Claim 25 likewise is patentable over Hoffman et al. in view of Schafer et al. and further in view of Wieczorek et al. Claim 28 has been canceled.

For the reason set forth above, Applicant respectfully requests that the Section 103 rejection of Claims 5, 25, and 28 be withdrawn.

The rejection of Claims 7, 8, and 29 under 35 U.S.C. § 103(a) as being unpatentable over Hoffman et al. and Schafer et al. and further in view of Iwanczyk et al. (U.S. Patent 5,773,829) is respectfully traversed.

Hoffman et al. and Schafer et al. are described above. Iwanczyk et al. describe a plurality of scintillator segments wherein "[e]ach of the segments has optimally prepared surfaces. The top 56 is roughened and the sides 58 are highly polished." Col. 8, lines 39-41. Iwanczyk et al. also describe that of a photodiode array (24) is covered with an anti-reflective coating. Col. 9, lines 26-28. Notably, Iwanczyk et al. is silent with respect to coatings for scintillators.

Applicant respectfully submits that the Section 103 rejection of the presently pending claim is not a proper rejection. Obviousness cannot be established by merely suggesting that it would have been obvious to one of ordinary skill in the art to modify Hoffman et al. according to the teachings of Schafer et al. and Iwanczyk et al. More specifically, as is well established, obviousness cannot be established by combining the teachings of the cited art to produce the claimed invention, absent some teaching, suggestion, or incentive supporting the combination. None of Hoffman et al., Schafer et al., and Iwanczyk et al., alone or in combination, describe or suggest the claimed combination. Rather, the present Section 103 rejection appears to be based on a combination of teachings selected from multiple patents in an attempt to arrive at the claimed invention. Specifically Hoffman et al. is cited for its teaching of a flexible cable wherein wires from the flexible cable are wire bonded to photodiode output signals, Schafer et al. is cited for its teaching that the same materials are suitable for both a three-dimensional alignment grid and a substrate, and Iwanczyk et al. is cited for its teaching of a photodiode array covered with an anti-reflective coating. Since there is no teaching nor suggestion in the cited art for the claimed combination, the Section 103 rejection appears to be based on a hindsight reconstruction in which isolated disclosures have been picked and chosen in an attempt to deprecate the present invention. Of course, such a combination is impermissible, and for this reason alone, Applicant respectfully requests that the Section 103 rejection of Claims 7, 8, and 29 be withdrawn.

Further, and to the extent understood, none of Hoffman et al., Schafer et al., and Iwanczyk et al., alone or in combination, describe or suggest the claimed combination, and as such, the presently pending claims are patentably distinguishable from the cited combination.

Claim 7 recites a finished detector module assembly suitable for use in a computed tomography (CT) imaging system, wherein the detector module includes "a substrate; a photosensor array mounted on the substrate; an array of scintillators optically coupled to said photosensor array and separated therefrom by a gap, said gap filled with a compliant clear film positioned distanced from at least one of said array of scintillators and said photosensor array less than one-half of a wavelength of light emitted by said scintillators; a clamping mechanism clamping said array of scintillators in place above and aligned with said photosensor array, wherein said photosensor array and said array of scintillators have facing surfaces, and wherein at least one of said facing surfaces is coated with an antireflection film, wherein said surface of said array of scintillators is coated with said antireflection film; and a flexible electrical cable electrically coupled to the photosensor array".

None of Hoffman et al., Schafer et al., and Iwanczyk et al., alone or in combination, describe or suggest a detector module that includes a substrate, a photosensor array mounted on the substrate, an array of scintillators optically coupled to the photosensor array and separated therefrom by a gap, the gap filled with a compliant clear film positioned distanced from at least one of the array of scintillators and the photosensor array less than one-half of a wavelength of light emitted by the scintillators, a clamping mechanism clamping the array of scintillators in place above and aligned with the photosensor array, wherein the photosensor array and the array of scintillators have facing surfaces, and wherein at least one of the facing surfaces is coated with an antireflection film, wherein the surface of the array of scintillators is coated with the antireflection film, and a flexible electrical cable electrically coupled to the photosensor array. Moreover, none of Hoffman et al., Schafer et al., and Iwanczyk et al., alone or in combination, describe or suggest a detector module that includes a compliant clear film positioned distanced from at least one of the array of scintillators and the photosensor array less than one-half of a

wavelength of light emitted by the scintillators. Rather, Hoffman et al., Schafer et al., Iwanczyk et al. are silent regarding a compliant clear film positioned distanced from at least one of the array of scintillators and the photosensor array less than one-half of a wavelength of light emitted by the scintillators. For at least the reasons above, Claim 7 is submitted to be patentable over Hoffman et al. in view of Schafer et al. and further in view of Iwanczyk et al.

Claim 8 depends directly from independent Claim 7. When the recitations of Claim 8 are considered in combination with the recitations of Claim 7, Applicant submits that dependent Claim 8 likewise is patentable over Hoffman et al. in view of Schafer et al. and further in view of Iwanczyk et al. Claim 29 has been canceled.

For the reasons set forth above, Applicant respectfully requests that the Section 103 rejection of Claims 7, 8, and 29 be withdrawn.

The rejection of Claims 11-14 and 30 under 35 U.S.C. § 103(a) as being unpatentable over Hoffman et al., Schafer et al., and Iwanczyk et al., and further in view of Yamashita et al. (U.S. Patent 4,823,016) is respectfully traversed.

Hoffman et al., Schafer et al., and Iwanczyk et al. are described above. Yamashita et al. describe scintillator elements wherein end surfaces of the elements are mirror polished. Col. 4, lines 19-20.

Applicant respectfully submits that the Section 103 rejection of the presently pending claim is not a proper rejection. Obviousness cannot be established by merely suggesting that it would have been obvious to one of ordinary skill in the art to modify Hoffman et al. according to the teachings of Schafer et al., Iwanczyk et al., and Yamashita et al. More specifically, as is well established, obviousness cannot be established by combining the teachings of the cited art to produce the claimed invention, absent some teaching, suggestion, or incentive supporting the combination. None of Hoffman et al., Schafer et al., Iwanczyk et al., and Yamashita et al., alone or in combination, describe or suggest the claimed combination. Rather, the present Section 103

rejection appears to be based on a combination of teachings selected from multiple patents in an attempt to arrive at the claimed invention. Specifically Hoffman et al. is cited for its teaching of a flexible cable wherein wires from the flexible cable are wire bonded to photodiode output signals, Schafer et al. is cited for its teaching that the same materials are suitable for both a three-dimensional alignment grid and a substrate, Iwanczyk et al. is cited for its teaching of a photodiode array covered with an anti-reflective coating, and Yamashita et al. is cited for its teaching of scintillator elements wherein end surfaces of the elements are mirror polished.. Since there is no teaching nor suggestion in the cited art for the claimed combination, the Section 103 rejection appears to be based on a hindsight reconstruction in which isolated disclosures have been picked and chosen in an attempt to deprecate the present invention. Of course, such a combination is impermissible, and for this reason alone, Applicant respectfully requests that the Section 103 rejection of Claims 11-14 and 30 be withdrawn.

Further, and to the extent understood, none of Hoffman et al., Schafer et al., Iwanczyk et al., and Yamashita et al., alone or in combination, describe or suggest the claimed combination, and as such, the presently pending claims are patentably distinguishable from the cited combination.

Claims 11-14 depend from Claim 7 which recites a finished detector module assembly suitable for use in a computed tomography (CT) imaging system, wherein the detector module includes "a substrate; a photosensor array mounted on the substrate; an array of scintillators optically coupled to said photosensor array and separated therefrom by a gap, said gap filled with a compliant clear film positioned distanced from at least one of said array of scintillators and said photosensor array less than one-half of a wavelength of light emitted by said scintillators; a clamping mechanism clamping said array of scintillators in place above and aligned with said photosensor array, wherein said photosensor array and said array of scintillators have facing surfaces, and wherein at least one of said facing surfaces is coated with an antireflection film, wherein said surface of said array of scintillators is coated with said antireflection film; and a flexible electrical cable electrically coupled to the photosensor array".

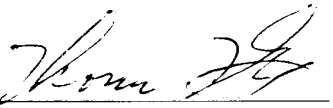
None of Hoffman et al., Schafer et al., Iwanczyk et al., and Yamashita et al., alone or in combination, describe or suggest a detector module that includes a substrate, a photosensor array mounted on the substrate, an array of scintillators optically coupled to the photosensor array and separated therefrom by a gap, the gap filled with a compliant clear film positioned distanced from at least one of the array of scintillators and the photosensor array less than one-half of a wavelength of light emitted by the scintillators, a clamping mechanism clamping the array of scintillators in place above and aligned with the photosensor array, wherein the photosensor array and the array of scintillators have facing surfaces, and wherein at least one of the facing surfaces is coated with an antireflection film, wherein the surface of the array of scintillators is coated with the antireflection film, and a flexible electrical cable electrically coupled to the photosensor array. Moreover, none of Hoffman et al., Schafer et al., Iwanczyk et al., and Yamashita et al., alone or in combination, describe or suggest an array of scintillators optically coupled to the photosensor array and separated therefrom by a gap, the gap filled with a compliant clear film positioned distanced from at least one of the array of scintillators and the photosensor array less than one-half of a wavelength of light emitted by the scintillators. Rather, Hoffman et al., Schafer et al., and Iwanczyk et al. are silent with respect to an array of scintillators optically coupled to the photosensor array and separated therefrom by a gap, the gap filled with a compliant clear film positioned distanced from at least one of the array of scintillators and the photosensor array less than one-half of a wavelength of light emitted by the scintillators. For at least the reasons above, Claim 7 is submitted to be patentable over Hoffman et al., Schafer et al., and Iwanczyk et al., and further in view of Yamashita et al.

Claims 11-14 depend directly from independent Claim 7. When the recitations of Claims 11-14 are considered in combination with the recitations of Claim 7, Applicant submits that dependent Claims 11-14 likewise are patentable over Hoffman et al., Schafer et al., and Iwanczyk et al., and further in view of Yamashita et al. Claim 30 has been canceled.

For the reason set forth above, Applicant respectfully requests that the Section 103 rejection of Claims 11-14 and 30 be withdrawn.

In view of the foregoing amendments and remarks, all the claims now active in this application are believed to be in condition for allowance. Reconsideration and favorable action is respectfully solicited.

Respectfully Submitted,



Thomas M. Fisher
Registration No. 47,564
ARMSTRONG TEASDALE LLP
One Metropolitan Square, Suite 2600
St. Louis, Missouri 63102-2740
(314) 621-5070

Express Mail No. EV US 339986945 US

15-CT-5233
PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: David M. Hoffman

Serial No.: 09/735,131

Filed: December 12, 2000

For: SOLID-STATE CT DETECTOR MODULES WITH IMPROVED SCINTILLATOR/DIODE COUPLING

Art Unit: 2878

Examiner: Constantine Hannaher

SUBMISSION OF MARKED UP CLAIMS

Mail Stop: RCE
Hon. Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Submitted herewith are marked up Claims in accordance with 37 C.F.R. 1.121(c)(1)(ii), wherein additions are underlined and deletions are [bracketed].

IN THE CLAIMS

4. (twice amended) A finished detector module assembly suitable for use in a computed tomography (CT) imaging system, said detector module comprising:

a substrate;

a photosensor array mounted on the substrate;

an array of scintillators optically coupled to said photosensor array and separated therefrom by a gap, said gap filled with [a member of the group consisting of air and] a compliant clear film positioned distanced from at least one of said array of scintillators and said photosensor array less than one-half of a wavelength of light emitted by said scintillators;

a clamping mechanism clamping said array of scintillators in place above and aligned with said photosensor array, wherein said clamping mechanism has a thermal coefficient of expansion less than that of said substrate; and

a flexible electrical cable electrically coupled to the photosensor array.

5. (twice amended) A finished detector module assembly suitable for use in a computed tomography (CT) imaging system, said detector module comprising:

a substrate;

a photosensor array mounted on the substrate;

an array of scintillators optically coupled to said photosensor array and separated therefrom by a gap, said gap filled with [a member of the group consisting of air and] a compliant clear film positioned distanced from at least one of said array of scintillators and said photosensor array less than one-half of a wavelength of light emitted by said scintillators;

a clamping mechanism clamping said array of scintillators in place above and aligned with said photosensor array, wherein said clamping mechanism comprises a silica glass containing titanium oxide, said array of scintillators comprises yttrium gadolinium oxide and an epoxy reflector material, and said substrate comprises a ceramic; and

a flexible electrical cable electrically coupled to the photosensor array.

7. (twice amended) A finished detector module assembly suitable for use in a computed tomography (CT) imaging system, said detector module comprising:

a substrate;

a photosensor array mounted on the substrate;

an array of scintillators optically coupled to said photosensor array and separated therefrom by a gap, said gap filled with [a member of the group consisting of air and] a compliant clear film positioned distanced from at least one of said array of scintillators and said photosensor array less than one-half of a wavelength of light emitted by said scintillators;

a clamping mechanism clamping said array of scintillators in place above and aligned with said photosensor array, wherein said photosensor array and said array of scintillators have facing surfaces, and wherein at least one of said facing surfaces is coated with an antireflection film, wherein said surface of said array of scintillators is coated with said antireflection film; and

a flexible electrical cable electrically coupled to the photosensor array.

24. (twice amended) A method for making a finished detector module suitable for use in computed tomography (CT) imaging systems, the finished detector module including a photosensor array optically coupled to an array of scintillators, said method comprising the steps of:

adhesively bonding a photosensor array to a substrate;

electrically bonding a flexible cable to the photosensor array;

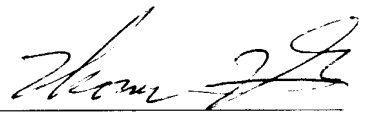
preforming a compliant, clear film into a size and shape configured for placement between and optical coupling of the photosensor array to an array of scintillators;

placing the preformed film on top of the photosensor array;

placing a scintillator array on top of the preformed film, the scintillator and the preformed film separated by a gap less than one-half of a wavelength of light emitted by the scintillators;

adhesively bonding a clamping mechanism to the scintillator array to form a scintillator/clamping mechanism assembly, wherein said step of placing the scintillator array on top of the preformed film comprises the step of adhesively bonding the clamping mechanism of the scintillator/clamping mechanism assembly to the substrate, wherein the clamping mechanism has a thermal coefficient of expansion less than the substrate.

Respectfully Submitted,



Thomas M. Fisher
Registration No. 47,564
ARMSTRONG TEASDALE LLP
One Metropolitan Square, Suite 2600
St. Louis, Missouri 63102-2740
(314) 621-5070